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A1 (54) Title: PROCESS FOR CONVERTING METHANE INTO ETHANE

WO 03/104171 A1 (57) Abstract: The invention relates to a process for producing ethane comprising contacting methane with a metal catalyst selected from metal hydrides, metal organic compounds and mixtures thereof. It also relates to a process for the conversion of methane to carbon-containing products comprising contacting methane with a metal catalyst comprising at least one metal, Me, chosen from the lanthanides, the actinides and the metals from Groups 2 to 12 of the Periodic Table of the Elements, so as to produce ethane in a proportion of at least 65%, especially at least 98% or 99% by weight with respect to carbon-containing products formed in the process. The process can be a single-step process, preferably carried out under conditions involving a non-oxidative catalytic coupling of methane, in particular under operating conditions maintained substantially constant, preferably continuously, during the ethane production, e.g. at a temperature ranging from -30°C to +80°C, preferably from 20°C to 500°C, under a total absolute pressure ranging from 10<sup>-5</sup> to 100 MPa, preferably from 0.1 to 50 MPa. The metal catalyst may be chosen from metal catalysts supported on and preferably grafted to a solid support. One of the main advantages of the present invention is to produce ethane with a very high selectivity.